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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,229	10/02/2006	Eva Blychert	1103326-0902	7595

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PATENT DEPARTMENT
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EXAMINER	
WESTERBERG, NISSA M	
ART UNIT	**PAPER NUMBER**
1618	

MAIL DATE	DELIVERY MODE
11/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,229	BLYCHERT ET AL.	
	Examiner	Art Unit	
	Nissa M. Westerberg	1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 10, 12 - 18, 21* is/are pending in the application.

4a) Of the above claim(s) *6,7 and 14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 5, 8 - 10, 12, 13, 15 - 18, 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 21, 2009 has been entered.

Claim Rejections - 35 USC § 112—1st Paragraph

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection. None of the modified cellulose derivative thickeners meet the written description provision of 35 USC § 112,

first paragraph, due to lacking chemical structural information for what they are and chemical structures are highly variant and encompass a myriad of possibilities. The specification provides insufficient written description to support the genus of thickeners that are modified cellulose derivatives encompassed by the claim, since there is no description of the structural relationship of these derivatives provided in the specification and Applicant has not provided a description as to how the base molecule must be changed so as to be "modified" but not modified to such an extent that is no longer a derivative of cellulose.

Response to Arguments

4. Applicant's arguments with respect to claims 1 – 5, 8 – 13 and 15 – 18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1 – 5, 8 – 10, 12, 13, 15 – 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. (Am J Health Sys Pharm, 2002) in view of Bergstrand et al. (US 5,817,338) and Morris et al. (US 5,869,118).

White discloses that for patients who are unable to take medications by mouth, administration of acid-suppression therapy by nasogastric or gastronomy tube is frequently required (p 2085, col 1, ¶ 1). *In vitro* studies demonstrated that administration of pellets of esomerprazole in tap water through a size 8 French (equivalent to a size 8

Cherrier tube) delivered virtually all of the 40-mg capsule (p 2087, col 2, ¶ 3). Dosage forms containing 30 mg of lansoprazole and 20 or 40 mg of omeprazole are also shown (figure 1, p 2086). It is not expected that *in vivo* delivery wherein the end of the catheter is in the acidic medium of the stomach will substantially affect the results as the pellets are enteric coated and thus are protected from dissolution in acid (p 208, paragraph bridging col 2 – 3). The size and weight of the pellets can be factors that would affect delivery through the nasogastric tubes (p 2087, col 3, ¶ 2).

White et al. does not teach the inclusion of a thickener in the composition or explicitly teach the administration of the formulation to a pediatric patient population.

Bergstrand et al. discloses a multiple unit tablet dosage form of the proton pump inhibitor omeprazole that can be dispersed in aqueous liquid to give t patients with swallowing disorders and in pediatrics (col 3, ln 53 – 60). The dispersed omeprazole units are of an appropriate size for feeding through a naso-gastric tube (col 3, ln 60 – 62).

Morris et al. discloses that liquid nutritionally complete formulas suffer from sedimentation of the insoluble components in the formulation settle to the bottom (col 1, ln 31 – 33), which leads to nutrient deficiency as the sediment may not go back into solution, the sediment can clog feeding tubes and produce a negative product appearance (col 1, ln 39 – 47). While micronization of the insoluble particles can lessen sedimentation, it does not deal with the issue of resuspension (col 2, ln 3 – 13). The viscosity of liquid composition under various levels of shear stress is an important characteristic and products with a high viscosity (over 50 cps) under high levels of shear

stress are not useful for tube feeding (col 2, ln 21 – 25). Morris et al. discloses composition with gellan gum as a thickener with a viscosity of less than 0.05 Pa s (50 cps; col 4, ln 46 – 55). The viscosity of the compositions allows for administration vie tube feeding, which reads on gastric tube administration.

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to incorporate a thickener into the enteric-coated suspension of proton pump inhibitor particles and to administer that composition through a gastric tube to a pediatric patient. The person of ordinary skill in the art would have been motivated to make those modifications and reasonably would have expected success because Bergstrand et al. discloses that such suspensions can be administered via gastric tube to patients such as pediatric patients in need of omeprazole. The person of ordinary skill in the art would have been motivated to make those modifications to prepare a suspension in which the material does not sediment but has a viscosity that allows for administration through a gastric tube and reasonably would have expected success because both White et al. and Morris et al. relate to the administration though a gastric tube of solution containing particles of insoluble material that can sediment, possibly leading to dosage problems and clogging of the tube used to administer the suspension.

The amount of proton pump inhibitor (PPI) active ingredient in a composition, the size of the particles and the viscosity of the suspension are clearly result effective parameters that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ and reasonably would expect success. It would have

been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient to add in order to best achieve the desired results. The appropriate dosage of the active ingredient will depend on the size, age, condition and dosing regimen of a patient. The appropriate dose for an infant or young child can be smaller than for an adult while the appropriate dosage for a teenager may be closer to or the same as an adult dose. Infants, young children and teenagers are all part of the pediatric patient population. As discussed by White et al., the particle size affects how the particles flow through the gastric tube and will also affect their sedimentation properties. Therefore, the thickener selected and the overall viscosity of the composition will depend on the size of the particles present in the composition and the viscosity requirements that will allow for administration through a gastric tube.

9. Claims 1 – 5, 8 – 10, 12, 13, 15 – 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al., Bergstrand et al. and Morris et al. as applied to claims 1 – 5, 8 – 10, 12, 13, 15 – 18 and 21 above, and further in view of Calanchi et al. (US 6,261,602).

As discussed in greater detail above, White et al., Bergstrand et al. and Morris et al. disclose the administration of a suspension of enteric coated PPI particles with a thickener through a gastric tube. The thickener prevents or reduces the sedimentation of the particles in the suspension. Morris et al. discloses gellan gum alone or in combination with carrageenan or carrageenan and carboxymethyl cellulose as the thickener agent (col 4, ln 39 – 54).

None of the references disclose the use of starch or xanthan gum as thickeners or the inclusion of flavoring agents, color agents or sweetening agents in the formulation.

Calanchi et al. discloses that xanthan gum, carrageenan and corn starch are thickener agents which can be used to increase the viscosity of the viscosity of the aqueous medium containing the dispersed pharmaceutical composition (col 3, ln 63 – col 4, ln 8). Flavoring agents or sweeteners can be added to the suspension (col 6, ln 12 - 24).

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to replace the carrageenan thickener with xanthan gum or starch in the pharmaceutical suspension of PPI that is administered via gastric tube for the treatment of gastrointestinal disorders. The person of ordinary skill in the art would have been motivated to make those modifications and reasonably would have expected success because Calanchi et al. discloses that xanthan gum and starch are functionally equivalent to the carrageenan used in Morris et al. in that they all act as thickeners to increase the viscosity of aqueous suspensions and thus would reduce sedimentation of particles in a suspension. The selection of additional ingredients such as flavoring or sweetening agents is known in the art and one of ordinary skill in the art would select those ingredients based on the overall requirements of the suspension. While the flavor and sweetness of a suspension delivered by gastric tube is less important than one that is placed in the mouth and swallowed, those agents can provide other benefits to the solution, such as providing an isotonic solution and/or providing calories to a patient.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nissa M. Westerberg whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8:00 a.m. - 4 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jake M. Vu/
Primary Examiner, Art Unit 1618

NMW